

## Workshop and homework, October 20, 2004

<b>Homework:</b>	9.3	19,20
	9.4	10
	11.1	2,13,15,21,46
	11.2	2,17,38,44
	11.3	3,13

**Workshop problem:** Consider the following sequences:

- $a_n = \left(1 + \frac{1}{n}\right)^n$
- $b_n = \left(1 + \frac{1}{n^2}\right)^n$
- $c_n = \left(1 + \frac{1}{\sqrt{n}}\right)^n$

(a) Use your calculator to graph the first ten or more terms of each sequence. Then use this information to guess each of the limits

$$\lim_{n \rightarrow \infty} a_n \qquad \lim_{n \rightarrow \infty} b_n \qquad \lim_{n \rightarrow \infty} c_n$$

(b) Replace  $n$  with  $x$  and use L'Hospital's Rule to find each of these limits.